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10/591,639	06/13/2007	Cheng Ni	037256.58133US	3297

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EXAMINER	
TALPALATSKIY, ALEXANDER	
ART UNIT	**PAPER NUMBER**
2832	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,639	NI ET AL.	
	Examiner	Art Unit	
	ALEXANDER TALPALATSKIY	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-28,30,31,33-43 and 45-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *25-28,30,31,33-36,39-43 and 45-48* is/are rejected.

7)☒ Claim(s) *37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 25-47 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. (US 5134374) in view of Miyamoto et al. (US 4672346).

4. In re claim 25, Breneman et al., in figure 6, discloses a plurality of moveable shimming plugs (60), the shimming plugs are mounted at the periphery of a pole plate (38). Breneman et al. fails to show the shimming plugs being positioned inside grooves and being adjusted with drive screws. Miyamoto et al. however, in figures 8-15, discloses shimming plugs (19,23) mounted in retaining grooves (figures 11,15) wherein the shimming plugs are movable only in the direction of the groove; and a plurality of drive screws (21,24) engaged with the shimming plugs in order to adjust the magnetic field. Therefore it would have been obvious to one skilled in the art at the time the invention was made to have modified the invention of Breneman et al. with the grooves taught by Miyamoto et al. and have positioned the grooves at the periphery of the pole plate, mount the shimming plugs inside the grooves; and further modified the invention

with the adjustment screws to drive the shimming plugs within the grooves to allow easier adjustment of the shimming plugs with just one screw and more securely hold the plug within the groove, thus putting less stress on the screw.

5. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. in view of Miyamoto et al. as applied to claim 25 above, and further in view of Sato (US 6700378).

6. In re claims 26-27, Breneman et al./Miyamoto et al. disclose a groove but fail to show a swallow-tailed or T-shaped groove. Sato however, in figure 5, discloses a swallow-tail shaped groove. It would have been obvious to one skilled in the art at the time the invention was made to have configured the shimming plugs and corresponding grooves in a swallow-tail configuration to improve the coefficient of static friction (see 1st paragraph of column 7 of the specification). Using T-shaped or any other shape of grooves instead of swallow-tailed grooves is a matter of design choice and routine experimentation with groove shapes.

7. In re claim 28, Miyamoto et al., in figures 8-15, discloses shimming plugs (19, 23) that are dismountable for replacement with plugs of different properties.

8. In re claim 30, Breneman et al. discloses a ring shaped part (56) but does not disclose grooves within the part. However, as stated in the rejection of claim 25 above, it would have been obvious to one skilled in the art at the time the invention was made to have modified the invention of Breneman et al. with the grooves taught by Miyamoto et al. and have positioned the grooves at the periphery of the pole plate.

9. In re claim 31 Breneman et al./Miyamoto et al. discloses the ring-shaped part but fails to disclose the number of grooves in the part. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have found the best number of grooves for the required application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. In re claim 40, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).* MPEP 2112.02. Specifically, the shimming plugs described in the prior art can be adjusted in synchronized manner. Furthermore, it would have been obvious to one of ordinary skill in the art to have used synchronized adjustment to evenly adjust the magnetic field over the whole circumference of the apparatus.

11. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. in view of Miyamoto et al. as applied to claim 25 above, in further view of Douglas (US Patent Application 2003/0234623 A1). In re claim 41, Breneman et al. modified by Miyamoto et al. discloses shimming plugs but fails to show electric motor being used to remotely adjust the plugs. Douglas however, in figure 1, discloses an electric motor (12) that can be adjusted remotely from a user interface (30). Therefore it

would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Breneman et al./Miyamoto et al. with the motor as taught by Douglas and have connected a motor to each plug in order to improve the versatility of the system and allow the system to be placed where manual access to adjust the plugs would be difficult.

12. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. in view of Miyamoto et al. in further view of Douglas as applied to claim 41 above, and in further view of Aubert (US Patent 4812765).

13. In re claims 42 and 43, the device of Breneman et al./Miyamoto et al./Douglas discloses electric motor being used to move the shimming plugs through computer control, but fails to disclose a computer used to measure magnetic field and process the measurement. Aubert however, in figure 1, discloses a computer programmed with magnetic field measurement/modeling software (27) being connected to a gauss meter (19) which measures the magnetic field of the device and allows the computer to produce control signals based on the measurements obtained from the meter. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Breneman et al./Miyamoto et al./Douglas with the computer from Aubert in order to significantly increase the shim adjustment procedure speed through a fully automated process controlled by the computer.

14. In re claim 45, Breneman et al., in figures 3 and 4, discloses two opposing magnetic field generating sources (22, upper and lower), and a pair of pole plates (38), mounted on the field generating sources.

15. In re claim 47, Breneman et al. discloses an MRI apparatus in figures 1-9.

16. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. (US 5134374) in view of Aubert (US 5168231).

17. In re claim 46, Breneman et al., in figure 3, discloses a yoke (32), an upper press plate (28) and a lower press plate (30) being oppositely arranged; and a pair of magnetic field sources (22) and pole plates (38) oppositely mounted on the press plates and are arranged to generate a magnetic field between them Breneman et al. fails to show a field adjusting device. Aubert however, in figure 12, discloses a magnetic field adjusting device comprising adjusting bars (8) mounted at the periphery of the magnetic field source (2) the bars being movable parallel to the magnetic field, the resulting field being adjusted by the positioning of the bars. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have mounted the adjusting bars taught by Aubert on the outside of the pole plates of Breneman et al. to enable additional adjustment of the magnetic field of the apparatus by moving the bars along the side of the pole plate.

18. In re claim 33, Breneman et al./Aubert disclose the pole plate mounted on the magnetic field generating source (22 in figure 3 of Breneman et al.), wherein the adjusting bars are movable in the direction perpendicular to the pole plate. In response to applicant's argument that the use of a closed MRI device reference is nonanalogous

art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the closed MRI device is in the general field of MRI devices and includes magnetic field adjusting method that can easily be converted to use on an open device by one of ordinary skill in the art.

19. In re claim 34 Aubert, in figure 12, discloses adjusting bars (8) mounted movably in retaining means (102).

20. In re claim 35 Aubert, in figure 12, discloses the retaining means (102) being arranged at the periphery of the magnetic field generating source (2).

21. In re claim 36, as discussed in the discussion of claims 46 and 33 above, it would have been obvious to one of ordinary skill in the art to have arranged the bars/retaining means of Aubert along the periphery of the pole plate of Breneman et al. since it is a logical place to position the bars for efficient field adjustment.

22. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. in view of Aubert as applied to claim 46 above, and further in view of Miyamoto et al. (US 4672346).

23. In re claim 38 Aubert discloses adjusting magnetic bars, but fails to show the adjusting bars being in the form of screws. Miyamoto et al. however, in figure 12, discloses magnetic screws (22) used to adjust magnetic field in the desired region. Therefore it would have been obvious to one skilled in the art at the time the invention

was made to have used the screws as taught by Miyamoto et al. to adjust the strength of the magnetic field of the device from Aubert since screws may allow a more precise field adjustment than bars. In response to the argument made by the applicant, Miyamoto et al. clearly shows that the adjusting bar itself comprises a screw which is driven through a thread formed in the retaining means. With regards to the precision argument, while it is true that bars could be adjusted as precisely as screws, a screw type adjustment would be much easier to make than a linear adjustment to the same precision. Furthermore, using the screws allows fewer parts to be used, thus lowering the cost of the device.

24. In re claim 39 Aubert discloses adjusting bars but does not disclose replacing the bars with other bars with different magnetic properties. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have changed the bars with others as necessary, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

25. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breneman et al. (US 5134374) in view of Miyamoto et al. (US 4672346).

26. In re claim 25, Breneman et al., in figure 6, discloses a peripheral member (56), a plurality of moveable shimming plugs (60), the shimming plugs are mounted at the periphery of a pole plate (38). Breneman et al. fails to show the shimming plugs being positioned inside grooves and being adjusted with drive screws. Miyamoto et al. however, in figures 8-15, discloses shimming plugs (19,23) mounted in retaining

grooves (figures 11,15) wherein the shimming plugs are movable in the direction of the groove; and a plurality of drive screws (21,24) engaged with the shimming plugs in order to adjust the magnetic field. Therefore it would have been obvious to one skilled in the art at the time the invention was made to have modified the invention of Breneman et al. with the grooves taught by Miyamoto et al. and have positioned the grooves at the periphery of the pole plate, mount the shimming plugs inside the grooves; and further modified the invention with the adjustment screws to drive the shimming plugs within the grooves to allow easier adjustment of the shimming plugs with just one screw and more securely hold the plug within the groove, thus putting less stress on the screw.

Allowable Subject Matter

27. Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

28. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER TALPALATSKIY whose telephone number is (571)270-3908. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elvin G Enad/
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